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ABSTRACT

Reactions of 50 2-year-old and 46 4-year-old Japanese children to selected experimental television programs were examined in two studies. The child was placed with his or her mother in a room where the experimental program was shown on one television and a fast-moving animation without sound was shown on a second television as a distractor. The child was observed by two video cameras and microphone, and his or her attention, language, and smile reactions to the experimental programs were recorded. The child was also interviewed to assess the degree of character recognition, comprehension, and recall. The first study used two short experimental animations, "Yadamon" (the Hard-to-Please Child) and "Tazura" (the Mischievous Child). The attention rating for these two segments was extremely high. About 20% of the 2-year-olds were able to answer questions about the story, but many of the 4-year-olds answered questions with concrete details and showed that they understood how the character felt. The second study compared the children's reactions to Japanese and English versions of an episode of "Sesame Street." The average attention ratings were about the same for both groups and both versions, with the exception of the older children, whose attention rating was slightly higher for the Japanese version. Data on language reactions and smile reactions revealed that the 4-year-olds showed more language reactions to and smiled more often at the English version than the Japanese one. Of the 13 references listed, 2 are in English and 11 in Japanese. (MES)

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Children and Television:

A Study of New TV Programs for Children Based on the Pilot of an Animated Production

1987

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Children and Television:

A Study of New TV Programs for Children Based on the Pilot of an Animated Production

1987

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1. A Brief History of the Study

"With Mother (Okaasan to Issho)," which began in 1959, is one of the longest running TV programs in Japan today. The program was originally intended for 4- and 5-year-old children, but during the 1970s a greater number of children were enrolled in kindergarten, lowering the average age of children still at home, and toddlers became the main viewers of the program. The results of several surveys(1) also showed that 2- and 3-year-old children watch many hours of television.

According to developmental psychology, quite a few of the things children in this age bracket need to learn can be taught by television.

So, in 1978, the production staff of NHK's "With Mother" and Takashiro Akiyama and Sachiko I. Kodaira of the NHK Broadcasting Culture Research Institute, with the cooperation of university researchers, launched a Research Project on Television Programming for 2-year-olds. This project was headed by Ms. Tsune Shirai, Professor Emritus of Tokyo Women's Christian University. Its goal was to study and develop TV programs for small children, and it has since undertaken multi-faceted efforts to develop new TV programs for small children.

The first study(2) by the project team (1979) centered around an experiment with 61 segments from existing TV programs and commercials which adults thought would appeal to 2-year-olds. The results, however, show that the segments adults thought "quite suitable for small children" had little appeal for 2-year-olds, while, on the other hand, the children paid attention to the segments adults had not expected them to. It also became clear that 2-year-olds, in general, love to watch human characters, images with the voice of an adult woman and animals. Technically, they prefer a picture without panning, zooming or shifting in the camerawork, where the characters move about actively.

In the second study[3] (1980), seven types of programs with different types of images and sounds were produced regarding segments about counting from 1 to 3 using objects, which particularly attracted the attention of 2-year-olds.

The results showed that 2-year-olds are very interested in counting using actual objects, and also in counting aloud.

In the third study[4] (1980), the reactions of boys and girls to TV programs on "skills and daily life" were tested first. The results showed that the attention rating for doing the laundry and other chores that are traditionally considered women's work was higher for girls, indicating a sex difference in the attention rating and showing that imitative behavior begins in early childhood.

In the second experiment of the third study (1980), narrative programs, "Large Turnip" and "Adventures of a Little Sparrow" were made with four different factors: image, narration, camerawork and length of the program, varying in approach, to see which would be the most suitable for ensuring that 2-year-olds and 6-year-olds would pay maximum attention to the program.

In the fourth study by the Research Project on Television Programming for 2-year-olds[5] (1981), eight different programs were made based on the children's yoga segment called "Hi, Pause!" in NHK's "With Mother." "Hi, Pause!" had five variations on the following points: performer (male and female, and with or without mustache), variety and the number of "pauses", the amount of instruction, backdrop and the length of the segment. Experiments similar to the earlier ones were conducted, producing useful results for determining the most appropriate structure for "Hi, Pause!"

The project team later conducted an audio-visual experiment using Computer Graphics animation for small children that had been broadcast by NHK as part of "Children's Summer Studio." The animation was of a game called "shiritori" in which players have to come up with a word that starts with

the same syllable as the final syllable of the preceding word (with pictures changing each time a new word is said. A typical series of words is: kaba (hippopotamus) - banana - nagagutsu (rain boots). There was also a similar game called "atamatori" which is to think of a word that begins with the same syllable as the preceding word (the pictures change each time a new word is said, like kaba - kaeru (frog) - karē raisu (curry rice). It was discovered that a picture at the turning point when images change (such as a computer graphic of a hippopotamus turning into a banana) had some effect on the attention rating. When the relationship between the percentage of correct answers and mental development was studied in September, 1985, useful results for program production were obtained.

Based on these results during the past eight years or so, in 1985 NHK began its own study on children's programs in a unique and unconventional way.

II. Experimental Segments and Process of Experiments

This experiment used the 12 segments listed in the table below. This thesis will report on the results of experiments using two kinds of segments, namely Study 1 dealing with "experimental animation" ("Yadamon" and "Tazura") and Study 2 which used "At the Movie Theater" from "Sesame Street."

<Series I>

1. The Japanese version of "At the Movie Theater" from "Sesame Street"
2. A stereo version of "Ball" (animation)
3. The letter "L" from "Sesame Street"
4. "Autumn" (an animated program from Finland) 1
5. "A song for Playing with Hands" 1 from *Mother Goose*
6. Experimental Animation 1 ---- "Yadamon"
7. Repeat of "Experimental Animation 1"

<Series II>

1. The English version of "At the Movie Theater" from "Sesame Street"
2. A monaural version of "Ball" (animation)
3. The number "4" from "Sesame Street"
4. "Autumn" (an animated program from Finland) 2
5. "A song for Playing with Hands" 2 which is a traditional Japanese song
6. Experimental Animation 2 ---- "Tazura"
7. Repeat of "Experimental Animation 2"

Note): We conducted a comprehension test after showing experimental program No. 6, but since it is only a minute long, it was shown twice in succession.

Child Subjects

A total of 100 2-year-olds and 4-year-olds participated in the experiment, but four of them were excused to balance the ages, so that the actual number of subjects was 96.

Table 1. Subjects and their Average Ages

[96 out of the 100 available]

	2-year-olds				4-year-olds			
	Series I		Series II		Series I		Series II	
	Number	Average Age	Number	Average Age	Number	Average Age	Number	Average Age
Total	25	2 : 6	25	2 : 6	23	4 : 6	23	4 : 6
Younger children	12	2 : 3	12	2 : 3	11	4 : 2	11	4 : 2
Older children	13	2 : 8	13	2 : 8	12	4 : 9	12	4 : 9
Boys	13	2 : 6	12	2 : 6	11	4 : 6	11	4 : 6
Girls	12	2 : 6	13	2 : 6	12	4 : 6	12	4 : 6

There were 50 2-year-olds (from 2 years old to 2 years and 11 months old) and 46 4-year-olds (from 4 years old to 4 years and 11 months old). In the selection, it was decided that for 2-year-olds or 4-year-olds, about the same number of children should be included in each group classified by age (the younger group from 2-or 4-0 to 5 months and the older group from 2-or 4-6 to 11 months) and by sex.

The experiment was conducted with teams of mothers and their children.

Researchers

It takes expertise and experience to interview a 2-year-old or 4-year-old child and test him or her. So four experts who are well versed in testing and dealing with small children were selected for each experiment to conduct the experiments, observe and record the children's behavior, conduct tests and record them. All the researchers were female.

Time Period and Venue for the Experiments

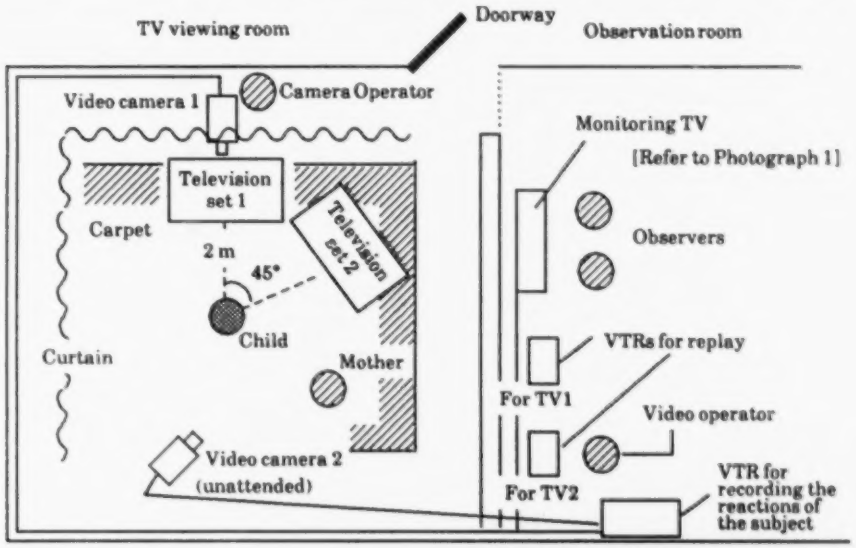
From March 4 to 8, 1986

At a TV studio in the NHK Service Center (in Shibuya Ward, Tokyo)

The Studio Used for the Experiment

The room in which the children watched the experimental programs and the room for the researchers were arranged in the manner shown in Diagram-1. The experiment was conducted on each child with his or her mother present.

Diagram 1. Rough Sketch of an Experimental Studio for TV Viewing



(Studio at NHK Service Center)

First, the researcher led the child by the hand to the TV-viewing room with the mother and had them sit on the carpeted floor, so that the subject could move about freely or lie down while watching television.

The mother sat in a chair at the position shown in the diagram. She sat on the opposite side of the television, so she could not be seen by the child watching the television but the child would feel at ease knowing his or her mother was near. The researcher instructed the mother to sit still and have as little contact with her child as possible, unless the child fussed or cried.

Even if the child stopped watching the experimental program, the mother was not supposed to tell her child to watch nor should she talk to the child. The idea was to create a situation similar to the one in which the child watches television at home and to let the child watch it or not without interference from the mother.

TV 1 shows an experimental program, while TV 2, a distractor program (to be explained later). The TV sets are arranged at an angle of 45 degrees with the child in the center so the screens of both televisions are within the child's sight and he or she can watch either one.

A few minutes after a mother and child have entered the TV viewing room and the child has become used to the new environment, a female researcher sits the child down in a particular position and says, "Now let's watch television. I wonder what's on? There are two TV sets and you can watch whichever you like." Taking this comment by the female researcher as a cue, another researcher in the observation room starts up both an experimental program and a distractor simultaneously. The researcher in the TV viewing room leaves after confirming that the experiment has begun smoothly. During the viewing session, the only people in the TV viewing room are the child, the mother and an operator of a video camera. Incidentally, the video-camera operator cannot be seen by the child.

Distractor Method

The aim of this experiment is to assess the reaction of a child to an experimental program shown on TV 1. With only one TV

set in the room, a child may pay attention to it simply because there is nothing else to do. So it's hard to tell whether the child is really interested in that experimental program or not.

This is why a colorful and fast-moving animated program of geometrical figures is shown on TV 2 as a distractor. The child has not seen it before, and cannot hear any sound from it, although the original has both music and sound effects.

Experimental results of the Research Project on Television Programming for 2-year-olds over the past seven years have confirmed that this method is effective for the observation of children's TV viewing habits, and this has led us to use this method in this experiment.

Observation

The child watching the television is video-taped from the two cameras in the room. Camera 1 is operated from behind the curtain so that the child does not notice it. It obtains a close-up of the child's face, showing the facial expressions and follows the eye movements (checking if the child is watching the experimental program, the distractor or neither of them.) Camera 2 is fixed, taking a full length shot of the child from behind and the two TV sets, giving an overall view of the child watching TV. (As Photograph 1 (p.6) shows, two shots are combined in a split-screen effect on the TV monitor in the observation room (the upper image is from Camera 1 and the lower one, from Camera 2.) Every word spoken by the child in the TV viewing room is picked up by the microphone. Both vision and sound are recorded on the VTR in the observation room.

Recording

During the process of the experiment conducted in the manner we have mentioned, the researchers in the observation room watch the split-screen on the monitoring TV and jot down notes about the subject's behavior.

After the experiment, the vision and sound recorded on the VTR are replayed and the reaction of each child is recorded second by second by using a Time Series Analyzer (developed by the Sakamoto Research Team of Tokyo Institute of Technology).

Three reactions recorded in this experiment are as follows:

1) Attention reaction to the experimental programs
2) Language reaction
3) Smile reaction

Ⅲ. Study 1: Reserach and Development of the Animated Program for the Preschoolers' Series, "With Mother"

1. The Aim of the Experimental Animated Program and the Production Process

After several discussions with members of the project team, it was agreed that a very short animated cartoon lasting for a minute or two dealing with a minimum number of characters should be made on an experimental basis.

The main character in the cartoon should represent a typical personality or behavioral style among small children, such as a bully or an untidy child and this characteristic should be clearly brought out during the minute-or-two duration of the story. The purpose of this is to let small children learn a lesson from this by watching the television which is continuously depicting a character behaving just like themselves.

A group of researchers first picked out more than twenty different characters each behaving in a way that is typical of small children and which had been listed in a previous study of the vocabulary of character description such as "quick to draw a conclusion," "slow to speak," "self-centered" and "talkative".

Another group of researchers was engaged in a search for appropriate name for the main characters in the children's programs by studying the words used in the "Anthology of Children's Songs" and also children's songs broadcast by NHK in an effort to find the most used epithets.

They decided on the following six basic names that represented the outstanding personal feature of each character:

1) Nakayoshi-chan, the Friendly Child
2) Ganbari-chan, the Hard-Working Child
3) Nikoniko-chan, the Smiling Child
4) Yadamon-chan, the Hard-to-Please Child
5) Chirakashi-chan, the Untidy Child
6) Tazura-chan, the Mischievous Child

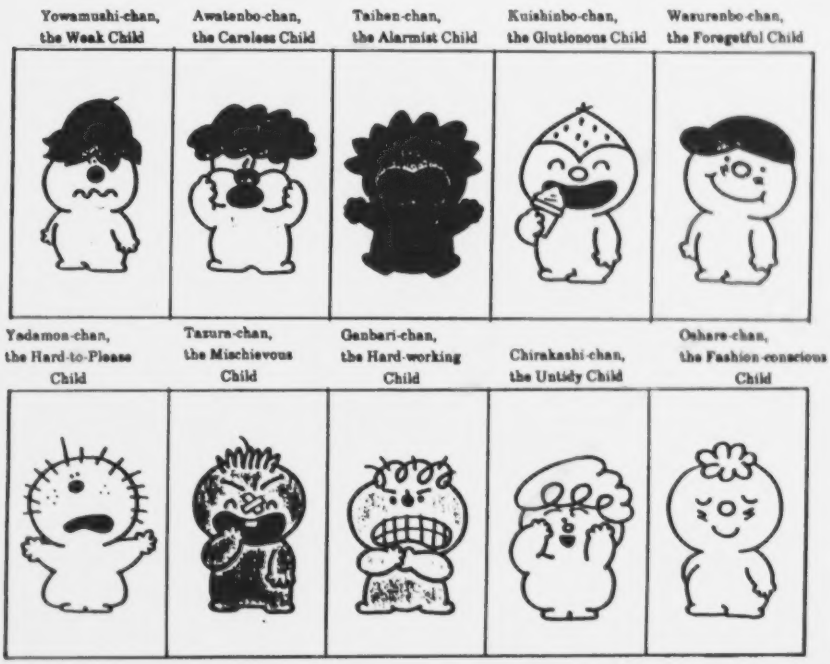
The next step was to discuss the plot, or the behavior of each character. One idea was to let one character appear in a variety of sequences so a comprehensive view of his characteristics could be achieved. Another idea was to develop a story in which the main character was contrasted against a subsidiary character who was the opposite type. Still others thought that children could learn that there are different types of people as they watched the different reactions of the characters in the same sequence. It was also suggested that a negative character could have a positive aspect so that a character could reflect dual personalities, like "slow but patient." As for the ending of the story, it was decided that there should be no moral conclusions such as: "So, we shouldn't be mischievous, should we?" After all these discussions, six stories were written, one for each of the characters.

Then came the drawing of the pictures for each character. After discussing the stories, and the names of the six characters that indicated their respective behavioral traits, work started on visualization of each character in with appropriate outlines and facial expressions. This process was taken care of by the program production group.

First, they approached several cartoonists, handed them the names of these six characters and asked them to draw their impressions of some of them.

Various sketches of "Yadamon-chan, the Hard-to-Please Child" were drawn by four cartoonists and many of their drawings were placed on a large table. All the members of the project team participated in the selection of several drawings which they thought small children too would find appealing and therefore would be appropriate for "With Mother." The program production group made the final judgement and chose the drawings of Shinobu Ariga. Then some additions were made to the previously-mentioned six characters, and eventually ten characters with ten different behavioral traits were created (p.12).

It took nearly half a year to reach this stage from the time the decision was made on the production of a new animated program for "With Morher."


Yowamushi-chan, the Weak Child
Awatenbo-chan, the Careless Child
Taiben-chan, the Alarmist Child
Kuishinbo-chan, the Glutionous Child
Wasurenbo-chan, the Foregetful Child
Yadamon-chan, the Hard-to-Please Child
Tazura-chan, the Mischievous Child
Ganbari-chan, the Hard-working Child
Chirakashi-chan, the Untidy Child
Oshare-chan, the Fashion-conscious Child

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At this stage, however, the drawings had not yet been animated. The same character can naturally give different impressions to small children depending on how it moves. We asked Sadao Tsukioka, the animation artist for "Astro Boy (Tetsuwan Atomu)" and "Everybody's Song" to do the animation.

For children's programs, what is of vital importance for the attention rate is whether a narrator is a man or woman, as study of past experiments has revealed. In general, a female voice is more desirable but since "With Mother" involves many female performers in other segments, it was decided to use a relaxed male voice for this animated program. Of the ten characters, Yadamon-chan, the Hard-to-Please Child and Tazura-chan, the Mischievous Child were animated for experimental purposes,

and were used in the audio-visual reaction measurement test with 2 and 4-year-old subjects.

Experimental Programs

The main purpose of this experiment was to examine the degree of attention and understanding of the two animated programs, "Yadamon" and "Tazura" by small children.

A total of 12 experimental programs including "Yadamon, the Hard-to-Please Child" and "Tazura, the Mischievous Child" were produced and then two stimulus series (Series I and Series II, each lasting ten minutes) were made by connecting the six programs containing "Yadamon, the Hard-to-Please Child" and another six programs containing "Tazura, the Mischievous Child." The children used as subjects were asked to watch either one of the series. As far as the animated programs of "Yadamon, the Hard-to-Please Child" and "Tazura, the Mischievous Child" are concerned, each subject was to watch either of them. The content of each series and the order of presentation are shown on page 4.

Both "Yadamon, the Hard-to-Please Child" and "Tazura, the Mischievous Child" were shown twice at the end of the 10-minute program, because they are extremely short, lasting only one minute and it was considered necessary for children to watch them twice so they would be prepared for the content-understanding test.

2. Main Points of Tests After TV Viewing

After the child has been watching the experimental program series for about 10 minutes, a researcher enters the TV viewing room again and takes the mother and child outside. She asks the child, "How did you like it? Did you enjoy it? Let's talk about the programs you've just seen, shall we?" as she leads the child to a waiting room.

Here, the researcher asks the child several questions about "Yadamon, the Hard-to-Please Child" or "Tazura, the

Mischievous Child" (whichever the child has watched). The mother can stay in the same room if the child so wishes, but in that case, the mother is advised not to speak or respond to him or her.

(1) Recognizing the main character

First, a check is made on the child's ability to recognize the main character of the program (either "Yadamon, the Hard-to-Please Child" or "Tazura, the Mischievous Child"). Some color stills taken from the television picture are shown to the child one by one and questions like "Did you see him in the story or not?" are asked to see if the child answers correctly or not.

(2) Spontaneous recall of the program content

Next, without being shown stills from the program, the child is asked such questions as "What was the story about, the one, you've just seen?" "Can you tell me what you remember about it?," so that the child can have a chance to talk spontaneously. Then, the child is asked about the point of the story (in the case of "Tazura, the Mischievous Child," a question like, "What did Tazura do when his friends invited him to play with them?")

(3) Recalling sequences with photographs

After reviewing some of the contents of the experimental program in this question-and-answer session between the subject and the researcher, the child is then tested to see if the story can be recalled in the correct order. In the case of a 4-year-old, six pictures are spread out before him, in a certain order, and with a 2-year-old, four pictures. (There are three possible ways to arrange the pictures in order, and one of these sequences is picked out at random to be used for each child.) The child chooses the right sequence of photographs responding to questions like "Now Sachiko-chan, tell me which scene did you see first?" or "What did you see next?" Then the pictures are placed from left to right in front of the child in the order the child indicated.

If a 4-year-old is unable to arrange the six pictures properly, the number is reduced to four (the same number of pictures that are shown to a 2-year-old) and the process is repeated of asking the child to arrange the pictures in order. Similarly, the pictures may be reduced from four to three for a 2-year-old child who is unable to arrange four pictures in order, and the questions are repeated.

(4) Recall of the content by showing sequences

After that, the researcher arranges the pictures in the correct order before the child, saying, "That's right. That's how the story goes." Then, pointing to the pictures from the three sequences, she asks the child again, "What happened to this child" or "What has become of this dog?" to let the child speak spontaneously again.

In this test of memory and comprehending all the remarks made by the child were recorded on the audio-tape for analysis and documentation after the test.

The time needed for the experiment and tests was 30 to 40 minutes per child including the time to get used to the surroundings.

3. Results of the Experiment

(1) Attention rating for the program

Concerning the experimental animated programs of "Yadamon, the Hard-to-Please Child" and "Tazura, the Mischievous Child," the attention rating of the children who paid attention to the TV screen was recorded second-by-second as the program progressed. The results by age are shown in Diagram 2 and Diagram 3 (pp.16~17).

For the memory test, "Yadamon" and "Tazura" which are only one minute long are shown twice in succession to the child, as already mentioned. But in collecting the data on attention rating, only the first reaction is recorded. The same goes for the other results dealt with in this section. The attention rating of

Diagram 2. Attention Rating and Story of "Yadamon"

(Yadamon is playing alone in a sandbox, making a sandcastle)

- Do you know that well-known Yadamon who's always saying "No"?
- When the dog says "Let's play together," Yadamon says "No."

(A cat comes along and points to Yadamon's bucket.)

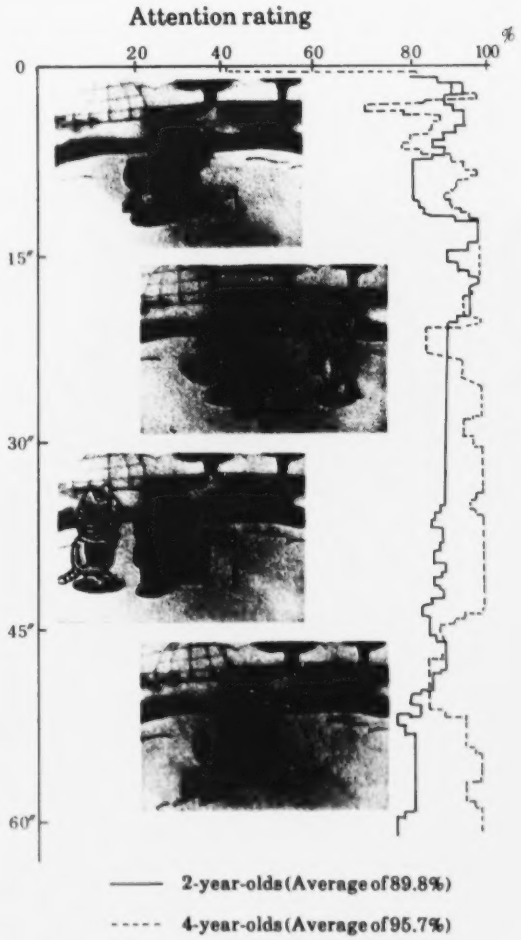
- When the cat says, "May I use it?" Yadamon says "No."
- When she says, "Please!" Yadamon still says "No."

(The cat leaves)

(Yadamon, alone again, makes a sandcastle)

- Then, Yadamon who always says "no" becomes disgusted with himself.

(when his towering sandcastle collapses over his head.)



Point of lesson: Yadamon makes it a custom to say "No" to anyone who asks him to do anything. Again today he keeps on saying "No" as he plays in the sandbox. Finally he becomes disgusted with himself.

Diagram 3. Attention Rating and Story of "Tazura"

(Tazura is eating bananas and keeps scattering the skin all over the floor.)

- Do you know that well-known Tazura, the Mischievous Child?

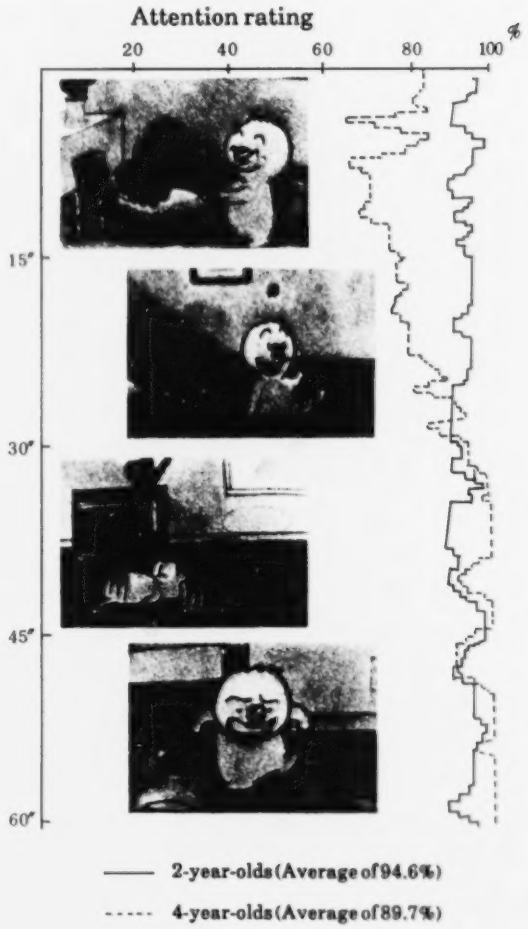
- To see how mischievous Tazura is, let's watch him for a while

(Tazura accidentally steps on the skin of a banana he has thrown away and slips)

- Inspiration!
  (A dog and cat stroll along togther and slips on the banana skins.)

(Seeing them slip, Tazura shouts..)

- "They slipped over!" and burst into laughter.
  (Tazura takes a step forward but he is surrounded by banana skins on all sides. And...)
- "Oops!"
  (The dog and cat look at Tazura who's in trouble now, and start laughing)
- Tazura doesn't like to have others play pranks on him.



Point of lessons: The mischievous child named Tazura again enjoys watching people slip on the banana skins he has tossed away. However, Tazura doesn't like others playing pranks on him.

"Yadamon" and "Tazura" is high from the beginning till the end for both the 2- and 4-year-olds, with the graph fluctuating between 70 and 100%.

While the attention rating for these two segments remains high and stable, there is a difference between the 2- and 4-year-olds in terms of their attention rating changing from sequence to sequence.

First, in the case of "Yadamon" (Diagram 2), the last ten seconds of the story (with Yadamon feeling disgusted with himself when the sandcastle he has built collapses on him) loses the attention of the 2-year-olds with a gradual decline in the attention rating, while it rises for the 4-year-olds whose attention has begun to decline a little. Does this difference have anything to do with the capacity of understanding the story's content?

In the case of "Tazura" (Diagram 3), the 2-year-olds consistently show a 90 to 100% attention rating. The 4-year-olds, on the other hand, show a slightly lower attention rating of 70 to 80% for the first 20 seconds (during which time Tazura keeps eating bananas and throwing away the skins.) The interest of the 4-year-olds increases in the sequence where Tazura steps on the banana skin, slips and then hits on an idea. Their attention rating after that remains consistently at 90 to 100%, just like the 2-year-olds. As far as the attention rating goes, behavior likes "eating bananas and scattering their skins" seems to hold the attention more of the 2-year-olds than the 4-year-olds.

Table 2(p.19) shows the average attention rating by age and sex. In any category, the attention rating of "Yadamon" and "Tazura" is extremely high. The programs won the highest attention rating not only among the experimental programs made at this time but also among all the programs used for experiments by the Research Project on Television Programming for 2-year-olds.

Table 2. Average Attention Rating by Categories

	2-year-olds					4-year-olds				
	Total	Yonger children	Older children	Boys	Girls	Total	Yonger children	Older children	Boys	Girls
Yadamon, the Hard-to-Please Child	89.8%	89.7	89.9	85.0	95.0	95.3	96.1	94.6	96.8	93.9
Tazura, the Mischievous Child	94.6	97.8	91.7	92.9	96.2	89.7	87.1	92.1	91.7	87.9

(2) Language Reaction

Besides attention, language reaction to the sequences was also studied during the viewing session of the experimental program. Language reaction was checked concerning the behavior of the TV character, the TV narration, sympathetic responses toward the behavior of the character such as eating bananas.

<Child's remarks about "Yadamon">

- "Yes" to the narrator's question, "Do you know that well-known 'Yadamon' who always says 'no'?" (2 and 6-month old boy)
- "Oh, cake! (because the sandcastle looks like it)" (on seeing Yadamon playing in the sand) "Mother, what is he making?" (on seeing Yadamon making the towering sandcastle in the concluding part) (4 and zero month old boy)

<Child's remarks about "Tazura">

- "No" (to the narrator's question, "Do you know that well-known mischievous boy, "Tazura"?) (4-year-and-3 month old girl)
- "He's eating!" (on seeing "Tazura" eating a banana) "Oh!" (on seeing a dog and cat slip on a banana skin)
  "Hey!" (to Tazura who laughs at them) (4-year-and-9-month old girl)

As in the case of attention rating a record was kept of all the children's detailed comments and second-by-second data (excluding a graph.)

Most 2-year-olds made remarks on fragmentary phenomenon, such as "Bow-wow" and "He's eating a banana." The 4-year-olds, on the other hand, replied to the narrator's question or scolded Tazura for his mischief-making. It seems that these reactions were based on their understanding and interpretation of the story.

4. Results of the Test After TV Viewing

In the case of both "Yadamon" and "Tazura", many of the 2- and 4-year-olds kept watching the television throughout the one-minute program. But how much did they remember and understand of the content of the story?

In the test of recognizing the main character through showing the child photographs, which was first conducted after the viewing those among the 2-year-olds who answered correctly all the four questions about both Yadamon and Tazura accounted for 20.0%, while with the 4-year-olds, the figures were 78.3% for Yadamon and 69.6% for Tazura.

The characters that appear besides a main character in both programs are a dog and a cat. As mentioned before, the attention rating was very high but to distinguish the main character (either "Yadamon" or "Tazura") was difficult particularly for the 2-year-olds.

Recalling the story by arranging the photographs in a particular order seemed difficult not only for the 2-year-olds but also for the 4-year-olds.

* "Yadamon"		Those who give correct answers
2-year-olds	Four pictures	1 out of 25
	Three pictures	2 out of 25
4-year-olds	Six pictures	3 out of 23
	Four pictures	2 out of 23

* "Tazura"

2-year-olds	Four pictures	0 out of 25
	Three pictures	3 out of 25
4-year-olds	Six pictures	5 out of 23
	Four pictures	4 out of 23

The importance of this type of program is that the child should really get the message. So, in this test, too, various methods were employed to assess the degree of the child's understanding of the story, such as the researcher asking a question like "How did you like the story?" so the child would talk freely and provide clues through chatting away or using photographs. The results were then analysed.

The analysis shows that it is too difficult for 2-year-olds to recall the entire story by themselves but about 20% of them are able to answer questions related to the story. For instance, when asked "What is this boy doing?" or "Then, what happened?," they would answer, "A dog and cat come along and talked to Yadamon but Yadamon said, 'No' to them." or "When the boy named Tazura threw away the banana skins, the dog and cat stepped on them and slipped." As mentioned in the language reaction results during the program viewing experiment, 2-year-olds' understanding of the story tends to be very fragmentary, only the most impressive sequences being remembered.

In the case of the 4-year-olds who were asked "How did you like the story?" to get them talking freely, 44% of them spoke about the story of "Yadamon" and 56% about "Tazura".

* "A dog came along and said 'Let's play', Yadamon said, 'No'. Then a cat came and said, 'Let me use your bucket,' and he said 'No'... Because the sandcastle fell over, he doesn't like himself any more." (4-year-and-8-month old boy)

This boy's answer grasps precisely the point of the story, but for most 4-year-olds, it seems difficult for them to reconstruct the story as precisely as this at the stage of freely talking.

However, to a question like "What happened to Yadamon when he was playing alone?," the 4-year-olds gave concrete answers like "The sandcastle began to fall down" and "Yadamon got blacksand all over him" and besides 35% of them said, "He became disgusted with himself". When asked "What did Yadamon think?" while shown Picture 4 (in Diagram 2 --- p.17), half of the 4-year-olds answered, "He became disgusted with himself," indicating that they understood how the character felt.

In the case of "Tazura," too, when the children were asked, "What doesn't Tazura like others to do to him?," half of the 4-year-olds answered, "To be made a fool of."

The experiment lasted nearly a week, and the results showed that the animated programs of "Yadamon" and "Tazura" attracted the attention of more of the small children then expected. The attention rating was not only higher than that of animated programs of Northern Europe which were also shown during the same experiment, but it was also one of the highest in the attention rating survey so far conducted by the Research Project on Television Programming for 2-year-olds.

But the experiment was not without problems. It was pointed out that the backgrounds were a little complicated and that the drawing style and the sizes of the subsidiary characters, "Mia" the cat and "Pero" the dog should be improved. There was also discussion about further improvement being made to the story line itself and the program presentation (continuity and repetition) in order to make sure that small children (particularly the 2-year-olds) get the message of the program correctly.

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Afterwards, the experimental programs, "Yadamon" and "Tazura" were slightly revised and each was made into six stories for broadcasting. Furthermore, six stories were created

with four other characters; "Yowamushi Bururu, the Weak Child", "Wasurenbo Pokke, the Forgetful Child", "Chirakashi Poitto, the Untidy Child" and "Kuishinbo Mogumogu, the Greedy Child." The series of 36 animated programs, with six programs devoted to each of the six characters, was entitled "Kids like Us" and has been included in "With Mother" (by the NHK) since September 1, 1986.

From the outset, various ideas about the programming were put forward and examined. One of them was to allot each of the six main characters to each day of the week from Monday through Saturday. However, on the basis of developmental psychology of small children, and experience gained through previous children's programs, it was decided that the same main character would be used throughout the week in different stories.

Ⅳ. Study 2: Comparison Between the Japanese and English Versions of "Sesame Street"

1. Aim of the Study

The countries of the world have high hopes for top quality children's programs and more and more effort will be put into international co-productions of such programs in the future. In order to plan and produce programs which will effectively encourage the physical and spiritual development of small children, it seems necessary for a program study to be made from various angles.

In Japan, "Sesame Street" was broadcast on NHK's nationwide network (1971~1982). At first it was subtitled, and came under the category of a children's program, but by and by the original version in English began to be used and it became a favorite among junior and senior high school students who wanted to learn English. (Note: Yamamoto Thesis(6)). The series has not been on air since April, 1982, which means today's small children in Japan have not seen "Sesame Street." For this reason, we decided to conduct an experiment on the reactions of small Japanese children watching the original English version of "Sesame Street" and the one dubbed in Japanese.

Our assumption was that small children who have not yet learned enough Japanese would pay attention to both English and Japanese versions of the program equally, but those who are more advanced in Japanese would show a higher attention rating to the Japanese version.

2. Experimental Programs

We asked CTW (Children's Television Workshop) in the United States to send us a large number of skits used in "Sesame Street." After discussing them with educationists, we selected one muppet skit entitled "At the Motive Theater" (a 2-minute-30

-second muppet play). Then the following two experimental segments were produced:

Segment 1 Original English version
Segment 2 Japanese version

Story of "At the Movie Theater"

Ernie and Bert, the two main characters in "Sesame Street," are in a movie theater watching a film. A lady with a huge hat with long feathers comes in and sits right in front of Ernie. Since the hat obstructs Ernie's view, he tries desperately to see the film, by constantly talking to Bert next to him or sitting on Bert's knees. But he is told by Bert and the people around them to keep quiet. Finally, at the suggestion of Bert, Ernie asks the lady to take off her hat. She apologizes and immediately takes her hat off. So Ernie is able to see the film again. But now Bert is having trouble watching the film because the lady puts her hat on the seat right in front of him.

3. Child Subjects

The number of child subjects and their breakdown by age are the same as those for "Kids like Us" (Study 1). A total of 96 2- and 4-year-olds were divided into two groups of uniform structure with the same number of boys and girls belonging to the younger 2-year-olds, the older 2-year-olds, the younger 4-year-olds or the older 4-year-olds. Group One was made to watch the Japanese version and Group Two, the English version.

4. Results of the Experiment

Diagram 4 shows the results of a second-by-second record of the children's attention to the experimental segment by using time series analyzer, and Table 3 (p.27) shows the average attention rating by sex and age.

The attention rating for both the 2- and 4-year-olds for the Japanese and English versions has a similar curve. During the two-and-a half minute segment, the climax is reached in the last 40 seconds. The attention rating for the climax rises with every age bracket watching the Japanese version, whereas their

Diagram 4. Attention Rating and Story of "At the Movie Theater"

Excuse me, please.
(A lady with big tall hat comes and sits in front of Ernie)

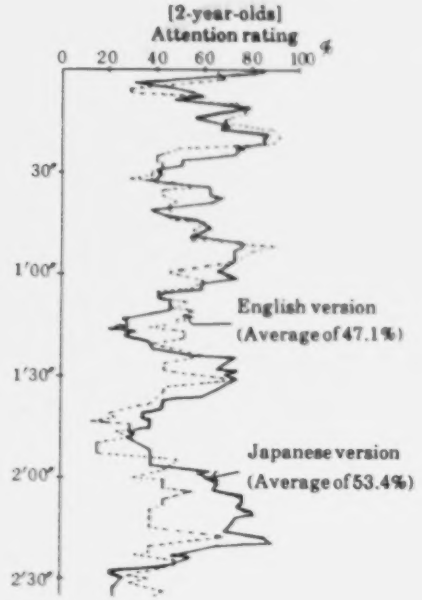
I can't see the movie, Bert.
What do I do?
I don't know, figure out yourself.

Hey, Bert. I'm gonna change seat with you.
No, you are not, Ernie.

What are you doing?
I'm sitting on your lap.
Get off, and be quiet.

(Bert gives a hint to Ernie)

Excuse me, Lady, will you please take off your hat, so I can see the movie?
Oh, not at all. I'm sorry.
Thank you very much. Thanks Bert, too.
(The lady takes off her hat and put it on a seat in front of Bert, now.)



Excuse me, please.
(A lady with big tall hat comes and sits in front of Ernie)

I can't see the movie, Bert.
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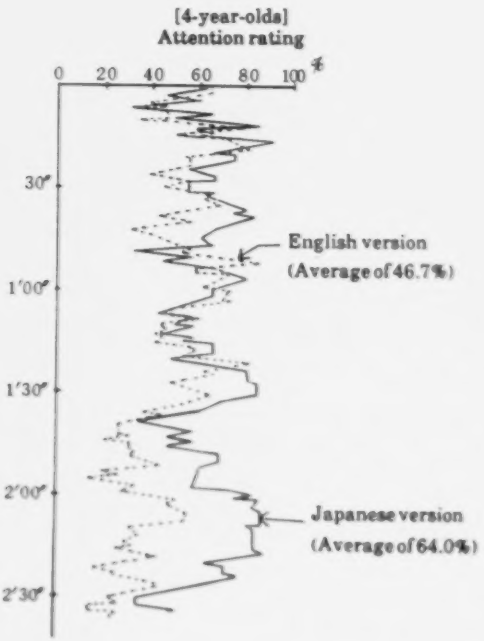
Hey, Bert. I'm gonna change seat with you.
No, you are not, Ernie.

What are you doing?
I'm sitting on your lap.
Get off, and be quiet.

(Bert gives a hint to Ernie)

Excuse me, Lady, will you please take off your hat, so I can see the movie?
Oh, not at all. I'm sorry.
Thank you very much. Thanks Bert, too.
(The lady takes off her hat and put it on a seat in front of Bert, now.)



attention rating for the English version decreases. With the 4-year-olds, there is a big difference in the attention rating between the English and Japanese versions during the last 40 seconds. This is particularly true for the 4-year-old girls. It became clear that the attention rating for the Japanese version is higher than that for the English version in sequences where the important dialogue for the understanding of the story of "At the Movie Theater" is concentrated.

Table 3. Average Attention Rating by Categories

	2-year-olds					4-year-olds				
	Total	Younger children	Older children	Boys	Girls	Total	Younger children	Older children	Boys	Girls
Japanese version	53.4%	55.0	51.8	49.0	58.1	64.0	69.3	58.7	62.0	65.8
English version	47.1	46.9	47.4	46.2	48.0	46.7	52.9	41.0	50.2	43.5

Table 4. Language Reaction

(percentage of children who expressed language reaction in the experiment.)

	2-year-olds					4-year-olds				
	Total	Younger children	Older children	Boys	Girls	Total	Younger children	Older children	Boys	Girls
Japanese version	32.0%	25.0	38.5	30.8	33.3	21.7	36.4	8.3	36.4	8.3
English version	32.0	33.3	30.8	25.0	38.9	21.7	18.2	25.0	9.1	33.3

Table 5. Smile Reaction

(percentage of children who smiled in the experiment.)

	2-year-olds					4-year-olds				
	Total	Younger children	Older children	Boys	Girls	Total	Younger children	Older children	Boys	Girls
Japanese version	20.0%	25.0	15.4	30.8	8.3	30.4	54.5	8.3	27.3	33.3
English version	16.0	8.3	23.1	8.3	23.1	52.2	54.5	50.0	36.4	66.7

According to the average attention rating (Table 3), the 3 attention ratings, these of the 2-year-olds for the Japanese and English versions, and that of the 4-year-olds for the English version are about the same. It is only the attention rating of the 4-year-olds for the Japanese version that is slightly higher. The results of the statistical examination show that the attention rating of the 4-year-olds to the Japanese version is higher than to the English one.

It has been proved that a segment, with a story like "At the Movie Theater" in "Sesame Street" dubbed in Japanese as the stimulus material, wins a high attention rating from 4-year-olds who have a deeper understanding of the language but that the attention rating is low with 2-year-olds who are not yet advanced in the use of the Japanese language.

In this experiment, apart from the attention rating the time series data was compiled and the ratio of the number of children who responded to the language and smile reaction tests was recorded. (Table 4 and 5)

In the language reaction test, many children repeatedly asked their mothers, "What's this?" when they saw the muppets or "Is this in English?," indicating that they have a lingual interest in the unknown. Overall, the 4-year-olds showed more language reactions to the English version than to the Japanese one.

In smile reaction, too, the 4-year-olds smiled more often at the English version than the Japanese one and this tendency was more apparent with the girls. Incidentally, the children showed both smile and language reactions on the same sequence.

v. Concluding Remarks

Among the segments in NHK's "With Mother," the first series based on the experimental production by the Research Project on Television Programming for 2-year-olds was "Hi, Pause!." The second series along this line was "Kids like Us" although in the meantime similar viewing experiments have been conducted with other programs of a short duration, such as "Chores" and a computer graphics animated program, "Life Cycle."

The activities of the Research Project on Television Programming for 2-year-olds include selection of an educational goal, experimental production of programs, and also the conducting of experiments, revision and broadcasting, but they do not end there. Research into children's reactions at home must continue to find out if 2-year-olds really enjoy the programs; how, for example, a mischievous child would react to the mischief making of Tazura whom he watches for six days in succession. There is no problem if the results are predictable but it is possible that the viewing behavior at home differs from that observes under controlled conditions during the experiments.

It was for this reason that the Broadcasting Culture Research Institute conducted a further field survey on children watching this program at home from November 1986 to February 1987 and then studied the results. Details of this report will be featured in the next issue.

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We are grateful to members of the Research Project on Television Programming for 2-year-olds (represented by Ms. Tsune Shirai) who spared no effort in assisting us in carrying out this experiment.

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